REMARKS

STATUS OF CLAIMS

Claims 8, 43, and 51 have been amended

Claims 60-68 have been added.

Claims 9-10, 44-45, and 52-53 have been cancelled herein, while Claims 17-19, 30, and 41 were previously cancelled.

No claims have been withdrawn.

Claims 1-8, 11-16, 20-29, 31-40, 42-43, 46-51, and 54-68 are currently pending in the application.

INTERVIEW SUMMARY

The Applicant thanks the Examiner for the Interview conducted on December 15, 2005. The interview was between Examiner Ramsey Refai and the applicant's attorney, Craig G. Holmes. Pending Claims 1, 6, 12, and 16 that were rejected in the Office Action were discussed along with U.S. Patent No. 6,728,670 issued to *Schenkel*.

The discussion in the Interview began by focusing on the first agenda item, namely the 103 rejection of method Claims 1, 6, 12, and 16. The Applicant explained that nothing in *Schenkel* described identifying an alteration at one device in response to changing the power state of another device (assuming for the moment that *Schenkel* did indeed show a change in power state from unpowered to powered or vice versa). The Applicant explained that in the statistical approach of detecting network connections in *Schenkel*, the change in power state at a destination device is also where any alteration would occur (e.g., a change in the packets such that the packets are not statistically the same as those sent from the source device). Thus, the Applicant explained that in reading *Schenkel*, the change in power state and the alteration both occur at the destination device, whereas with the approach of Claim 1, the change in power state is at a first network device while the identified alteration occurs at a second network device.

While the Examiner admitted that he was not really prepared for the Interview, the Examiner identified two portions of Schenkel that the Examiner claimed did show the power state and the alteration at different devices. Yet in each instance, the Applicant was able to

explain that the text following that cited by the Examiner made clear that the alleged change in power state and the alteration were both at the destination device in Schenkel. Thus, the Examiner was unable to identify during the Interview where *Schenkel* shows an alteration at a second device that is identified in response to sending the packets to the destination device, but that he was sure such a teaching "was in there."

The Examiner then stated that the entire reference should be read, not just the portions cited in the Office Action. The Applicant replied that the entire *Schenkel* reference had been reviewed, yet the Applicant was unable to find anything other than the alleged change in power state and the alteration in the form of statistically different packets being at the same device in *Schenkel*. As a result, no agreement was reached regarding the firs agenda item.

The discussion next moved to the second agenda item, which focused on why the stimulation of an idle device in *Schenkel* was not the same as changing the power state from unpowered to powered (or vice versa), nor the same as supplying power to the destination device. The Applicant pointed to *Schenkel's* definition of "idle," which is that the activity on the device is below some arbitrary cutoff or threshold. Thus, the Applicant explained that an idle device in *Schenkel* had to have power to have any traffic, plus that the destination device would be unable to receive the signal burst of packets if the destination device had no power. The Examiner responded that the Applicant had defined an "unpowered" device in the Application on page 10 as including a device being in "standby." The Applicant appreciates the Examiner's description of the Office Action's reliance on this portion of specification in the rejections, which significantly aided the Applicant in understanding the Examiner's interpretation of the claims, and which is addressed more fully in the arguments below.

Nevertheless, the Applicant then explained to the Examiner that the definition on page 10 was not of the term "unpowered" but rather of the term "power cycling," and that that term was not being used in Claims 1, 6, or 12, but only in Claim 16, and further that Claim 16 was limited to power cycling from "off" to "on" and vice versa. Thus, the Applicant explained that Claim 1 is not properly interpreted in light of the definition of the term "power cycling" since that term is not used in Claim 1. Even if the term "power cycling" were used in Claim 1, then Claim 1 (as in Claim 16 that actually does use the term "power cycling"), is expressly limited by the terms of the claim to power state changes being either from unpowered to powered or vice versa, which excludes powers states such as "active" and

"standby" since a device that is either "active" or in "standby" must have power and therefore is in a "powered" state. The Examiner disagreed and reiterated the position that the definition of "power cycling" on page 10 was the same as defining the term "unpowered." As a result, no agreement was reached.

Regarding the third agenda item, nothing was discussed as the Examiner said that he had another interview that was to begin shortly, and therefore that the Examiner had to terminate the Interview a half hour after the Interview had begun.

SUMMARY OF THE REJECTIONS/OBJECTIONS

Claims 1-3, 5-10, 12, 14, 20-24, 27, 31-35, 38, 42-45, 48, 50-53, and 56 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent Number 6,728,670 issued to Schenkel et al. (" *Schenkel* ") in view of U.S. Patent Number 6,516,345 issued to Kracht (" *Kracht* "). Claims 4, 11, 15, 46, 49, 54, and 57 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Schenkel* in view of *Kracht* and in further view of U.S. Patent Number 6,628,623 issued to Noy (" *Noy*"). Claims 13, 25, 26, 28, 36-37, 39, 47, 55, 58, and 59 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Schenkel* in view of *Kracht* and in further view of U.S. Patent Number 5,347,167 issued to Singh (" *Singh*"). Claims 16, 29, and 40 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Schenkel* in view of *Kracht* and in further view of U.S. Patent Number 6,507,273 issued to Change et al. (" *Chang* "). The rejections are respectfully traversed.

A. CLAIM 1

(1) INTRODUCTION TO CLAIM 1

Claim 1 features:

"A method for determining one or more logical interconnections among a plurality of network devices that are interconnected in a network in an indefinite relationship, wherein a power state is associated with a first network device, the method comprising the computer-implemented steps of:

changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**;

identifying whether an alteration occurs at a second network device in response to changing the power state of the first network device; and

when the alteration occurs at the second network device, creating and storing first information representing a logical connection of the first network device to the second network device." (Emphasis added.)

Thus, Claim 1 features "changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**." For example, in FIG. 1, the initial power state of the CPU 130 may be **unpowered** (or "*off*"), but then **power is supplied** to CPU 130 (e.g., CPU 130 is turned *on*)." (Application, page 10, lines 20-22; emphasis added.) As another example, the Application explains that the " 'power cycling' of a network device means that the power state of the network device is changed or altered from what the power state was immediately prior to the power cycling action. The power state of a network device before power cycling may be '*off*,' **unpowered**, or ..."*on*," **powered**...." (Application, page 22, lines 20-24; emphasis added.)

(2) THE OFFICE ACTION'S CITATIONS FROM *SCHENKEL*

The Office Action states that *Schenkel* discloses "changing the power state of the first network device from either (a) an unpowered state to a powered state or (b) from the powered state to the unpowered state; identifying whether an alteration occurs at a second network device in response to changing the power state of the first network device (column 2, lines 20-40; shows a signal sent from a source device to a destination device, Figure 2, and column 3, lines 18-32.)"

However, as the Applicant discussed in the response to the two previous Office Actions, the first cited portion from Column 2 of *Schenkel* describes measuring the traffic output of one device (e.g., the sequence of bursts of packets formed of orthogonal signals), measuring the traffic input of another device, and determining connections between devices or a sequence of connections between devices based on whether the measured traffic between the two devices is statistically the same or not. (Col. 2, lines 20-40.) The last cited portion from

Column 3 of *Schenkel* describe a series of four devices, A through D, connected in series in which the output of one device is the input to the next device, as illustrated in Figure 2. (Col. 3, lines 18-32; Figure 2.) Thus, the cited portions of *Schenkel* describe sending traffic from the source device to a destination device and comparing the traffic sent from the source device to the destination device. If the traffic is statistically the same, *Schenkel's* approach is to conclude that the source device is connected to the destination device, otherwise if the traffic is not statistically the same, the source device is not connected to the destination device.

The "Response to Arguments" section of the Office Action also cites additional portions of *Schenkel* that are relevant to these features of Claim 1 as follows: "column 19, lines 32-62, column 22, line 49 – column 23, line 28, and column 25, line 60 – column 26, line 19)." However, the cited portion of Column 19 of *Schenkel* describes and defines an "idle" device as a device in which the "traffic in or out of it is insignificant...Idleness can be expresses as having a mean level of traffic below some cutoff to be chosen by the operator." (Col. 19, lines 34-36 and 41-42.) Thus, because *Schenkel's* device is receiving traffic, the device must be powered, and when receiving more traffic so that the device is no longer idle, the device remains powered.

The cited portion of Columns 22 and 23 of *Schenkel* describe embodiments referred to as "Jove" that is described as "a method that can connect subgraphs in a network that would otherwise remain disconnected," and specifically that the "general concept is to determine a path by sending a signal from a source to a destination while watching for the traffic caused by this signal on all objects that could be on the path" in which "Jove request the network traffic management centre computer to send a large burst of traffic across the network to a specified target computer...[such that] If the burst passes through two subgraphs, a gap exists in the path of the burst due to the presence of a device that does not report its traffic." (Col. 22, lines 53-54 and 61-64; Col. 23, lines 17-19 and 23-25.) Thus, the second cited portion of *Schenkel* describes how "Jove" is used to determine connections based on the use of subgraphs.

The cited portion of Columns 25 and 26 of *Schenkel* describe "The Nature of the Burst" as a "sequence of bursts of PING or other packs" so that there is no "impact on the CPU of the target machine" so as to "spread this burst of packets out enough so that routing

devices in the path will not be overloaded" and the use of "sequences of bursts." (Col. 25, lines 59-60 and 67; Col. 26, lines 6-7 and 16.) Thus, the third cited portion of *Schenkel* provides details on the signals or packet bursts.

Yet as described below, none of these portions of *Schenkel* describe either "changing the power state of the first network device from either (a) an unpowered state to a powered state or (b) from the powered state to the unpowered state" or "identifying whether an alteration occurs at a second network device in response to changing the power state of the first network device" because (1) the sending of packets from a source device to a destination device in *Schenkel* does not change the power state of the destination device, and (2) even if it did, any alteration occurs at the destination device, not the source device. These two arguments are fully outlined in the following two sections.

The Applicant notes that the Examiner explained during the Interview that a cited reference must be read as a whole, and therefore that the Applicant should not solely focus on the portions cited from *Schenkel*. The Applicant has reviewed not just the cited portions of *Schenkel*, but the entirety of *Schenkel*, yet the Applicant has failed to find anything that supports the rejections in the Office Action.

Furthermore, the Applicant notes that according to the MPEP, in an Office Action "the particular part relied on must be designated as nearly as practicable ... The pertinence of each reference, if not apparent, must be clearly explained ..." (MPEP §707, citing 37 C.F.R. §1.104(c)(2)), and "the particular figure(s) of the drawings(s), and/or page(s) or paragraph(s) of the reference(s), and/or any relevant comments briefly stated should be included." (MPEP §707). Thus, the Applicant respectfully requests that if the Examiner believes other portions of *Schenkel* not cited in the Office Action disclose the features of the claims that the Applicant has been unable to locate, that the Examiner provide citations to those portions of *Schenkel* along with an explanation as to why the Examiner believes the disclosure in those portions of *Schenkel* disclose the features of the claims.

(3) *SCHENKEL* FAILS TO SHOW CHANGING THE **POWER STATE** OF A ***FIRST*** NETWORK DEVICE AND IDENTIFYING AN **ALTERATION** AT A ***SECOND*** NETWORK DEVICE

As discussed during the Interview with the Examiner, the Applicant is unclear about which portions of *Schenkel* are being relied upon as showing the following features of

Claim 1: (a) "the first network device", (b) "the second network device", (c) "the power state of the first network device," (d) "the alteration occurs at the second network device." The Applicant's attempts at matching the devices and discussion of *Schenkel* to the first two features of Claim 1 (e.g., the first and second network devices) results in inconsistencies with other two features of Claim 1 (e.g., the power state and the alteration).

From the Office Action, it initially appears that the Office Action is equating the "destination device" and "source device" of *Schenkel* to the "first network device" and "second network device," respectively (e.g., items (a) and (b) above), of Claim 1 because the Office Action says that the "signal bursts are sent to the destination device until no longer idle, which is a change of the power state." Assuming for the moment that sending the signal bursts is a change of power state, this matching of *Schenkel's* devices to those of Claim 1 is consistent with feature (c) above because the first network device (e.g., the destination device) has its power state being changed. However, this is inconsistent with feature (d) above of "identifying whether an alteration occurs at the second network device" because that would mean an alteration occurs at the source device in *Schenkel* that sends the signal bursts (or some other device not described).

Furthermore, in *Schenkel's* approach, the link between the source device and destination device is determined by a statistical comparison of the traffic at the destination device and the source device. Thus, a change that occurs, if a change does occur at all, is at the destination device, not the source device, which is the same device at which the power state changes. Yet in the Approach of Claim 1, while the change in power state if of the first network device, the alteration occurs at the second network device. Thus, the Applicant respectfully submits that based on this first application of the elements disclosed in *Schenkel* to the features of Claim 1, *Schenkel* fails to disclose "identifying whether an alteration occurs at the second network device in response to changing the power state of the first network device."

Alternatively, if the source and destination device are reversed such that the "first network device" of Claim 1 is the "source device" of *Schenkel* and the "second network device" of Claim 1 is the "destination device" in *Schenkel*, then that would be consistent with feature (d) above in that an alteration is identified at the destination device (e.g., the change, if any, in the packets that are sent to the destination device). However, this is inconsistent with

feature (c) above of "the power state of the first network device" because that would mean that the power state of the source device is changed. However, in *Schenkel's* approach, it is the power state of the destination device that is allegedly changed by sending the signal burst of packets, not the source device. Thus, the Applicant respectfully submits that based on this second application of the elements disclosed in *Schenkel* to the features of Claim 1, *Schenkel* fails to disclose "changing the power state of the first network device from either (a) an unpowered state to a powered state or (b) from the powered state to the unpowered state."

To summarize, regardless of how the source and destination devices of *Schenkel* are matched against the first and second network devices of Claim 1, *Schenkel* always has **both** the change in power state **and** the alteration at the destination device, yet in Claim 1, the change in power state and the alteration occur at ***different*** network devices, namely the first and second network devices.

If the Office Action is based on a different matching of the elements of *Schenkel* to the features of Claim 1, then the Applicant respectfully requests that the next communication from the Office include a description of what elements of *Schenkel* are being relied upon show the four features (a) through (d) listed above from Claim 1.

(4) *SCHENKEL* IDENTIFIES CONNECTED DEVICES WHEN TRAFFIC IS THE SAME, WHEREAS CLAIM 1 IDENTIFIES CONNECTED DEVICES WHEN AN ALTERATION OCCURS

The link between the source and destination devices in *Schenkel* is only determined if the traffic is statistically the same, and if the traffic is not statistically the same, then there is no link between the source and destination devices. But when the traffic is the same, then **there is no alteration** in the traffic between the two devices in *Schenkel*. Only if the traffic is ***not*** **statistically the same** is there not a link determined between the source and destination devices. In other words, *Schenkel's* approach only identifies that two devices are connected if there is **no** change in the traffic, but if the traffic *is changed*, then there is **no** link.

Yet the approach of Claim 1 is the opposite of that of *Schenkel*. Specially, Claim 1 expressly features that the logical connection is created and stored when the alteration ***does occur*** at the second device. But if this situation occurs with *Schenkel's* approach, the opposite conclusion is reached, namely that the source and destination devices are ***not*** connected.

(5) *SCHENKEL'S* "**IDLE**" DEVICE IS NOT AN "***UNPOWERED***" DEVICE AS

Contrary to the assertions of the Office Action, the mere sending of a signal comprised of a sequence of packet bursts is not the same as "changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**" as in Claim 1. In *Schenkel*, the sending of packet bursts does not change the power state of the sending device, the receiving device, or any other device, which is a fundamental difference between *Schenkel* and the approach of Claim 1. In fact, some changes to the power state of a sending device, such as from powered to unpowered, would render the approach of *Schenkel* inoperative because the sending device would be incapable of sending the signal. Even other power state changes, such as by turning a device from unpowered to powered, would not result in sending the sequence of bursts of packets as disclosed in *Schenkel*.

In the "Response to Arguments" section, the Office Action states that "Schenkel teaches the stimulation of idle devices by using signal bursts in a network to allow discovery of network topology. *Signal bursts are sent to a device until no longer idle, **which is a change of the power state***. Signal bursts can then be sent across this device to other devices. The topology is then determined by examining the response, or alteration, in other devices, which are connected to the idled device (For example; in column 19, lines 32-62, column 22, line 49 – column 23, line 28, and column 25, line 60 – column 26, line 19)." (Emphasis added.)

The Applicant respectfully disagrees that sending signal bursts to an idle device until the device is no longer idle is a change of the power state, based on the definition of an "idle" device and "idleness" as provided in *Schenkel*. Specifically, *Schenkel* states:

> Stimulation of idle devices in a network allow their connections to be identified directly. The present invention can determine that a device is **idle** ***because the volume of traffic in or out of it is*** **insignificant**. It can then instruct a signal burst to be sent to or across this device in order to generate ***enough traffic*** to accurately locate it in the network...***Idleness*** can be expressed as having ***a mean level of traffic below some*** **cutoff** to be chosen by the operator. A convenient value of this cutoff is 5 units of activity per sampling period as this provides the classic chi-squared formulation with sufficient data for its basic assumptions to be reasonable accurate. (Col. 19, lines 33-46; emphasis added.)

Therefore, ***Schenkel*** **clearly defines an idle device as a device for which the traffic is not zero, but** ***merely insignificant***, meaning that the traffic through the device is below a cutoff value does not allow for accurate identification of the network connections. The use of a signal burst to increase the traffic for an idle device so that the device can be located indicates that the device is already in a "powered" power state (e.g., the device is "on"). The sending of the signal burst does not change the power state from unpowered to powered or from off to on (or vice versa). Rather, the signal burst supplies sufficient traffic so that the statistical comparison of the traffic sent to the traffic received is meaningful. Because the basis for *Schenkel's* connection identification approach is a statistical method, sufficient traffic must be used in order to make a statistically meaningful comparison between the traffic sent and the traffic received, and therefore conclude that the sending device and the receiving device are connected.

Thus, **an "*idle*" device as defined in *Schenkel* is a device that is in the "*powered*" power state (or "on")**, as opposed to an "unpowered" power state (or "off"). Changing the status of the device in *Schenkel* from "idle" to "not idle" merely means that there is sufficient traffic through or to the device for a statistically meaningful comparison of traffic sent versus traffic received, but the power state of the device remains unchanged in the powered or "on" power state. If the initial power state of an idle device were unpowered or off, then the device would be unable to receive the signal burst in Schenkel's approach.

In contrast to *Schenkel*, Claim 1 features "changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**." Neither the cited portions of *Schenkel* or any other portion of *Schenkel* discloses anything about changing the power state from "an unpowered state to a powered state" as featured in Claim 1, because *Schenkel's* technique of changing the status of an "idle" device, that is already powered but merely has too little traffic to accurately use *Schenkel's* statistics-based connection identification approach, by sending a signal burst merely increases the traffic to the device still leaves the device in a powered power state. Furthermore, there is nothing in either the cited portions of *Schenkel* or any other portion of *Schenkel* about changing the power state from "the powered state to the unpowered state," as featured in Claim 1.

(6) THE OFFICE ACTION IMPROPERLY RELIES ON READING INTO CLAIM 1 A DEFINITION OF A TERM NOT USED IN CLAIM 1

During the Interview, the Examiner explained that the Office Action was relying upon the definition of "unpowered" from page 10 the specification, yet the definition provided therein is not of the term "unpowered" but rather of the term "power cycling." Specifically, the specification states:

> Next, the power state of a device is changed, as indicated in block 220. For example, in FIG. 1, the initial power state of CPU 130 may be unpowered (or "off"), but then power is supplied to CPU 130 (e.g.,. CPU 130 is turned on). The changing of a power state may be referred to as "**power cycling**." However, **that term** is used herein in a broader sense to also include turning off a network device or even to change the power state of a network device from standby to active. (Application, page 10, lines 20-25; emphasis added.)

Note that in this portion of the Application, the term "power cycling" encompasses three types of power state changes: (1) from unpowered to powered, such as going from not being supplied with power to being supplied with power; (2) from "off" to "on;", and (3) from standby to active. This is consistent with other portions of the Application. For example, the Application describes "power cycling" as follows:

> The "**power cycling**" of a network device means that the power state of the network device is changed or altered from what the power state was immediately prior to the power cycling action. The power state of a network device before **power cycling** may simply be ***"off," unpowered, or inactive***, or ***"on," powered, or active***. The power state of a network device may also be any other power characteristic of the network device. For example, the power state may be a form of power conservation mode, such as a ***power saving or "sleep" state***, in which only minimal power is used by the network device. (Application, page 22, line 20 to page 23, line 2; emphasis added.)

The only place in the claims where the term "power cycling" is used is in Claims 16, 29, and 40 in which the term is expressly limited to one type of change of power state, namely "power cycling a first network device from either 'off' to 'on' or from 'on' to 'off'." The term "power cycling" is not used in Claim 1 or in any of the other independent claims. Rather, Claim 1 expressly features "changing the power state of the first network device," and similar to Claims 16, 29, and 40, the type of change of power state is expressly limited by the words of Claim 1 to "from either (a) an unpowered state to a powered state or (b) from the

powered state to the unpowered state." Thus, Claim 1 expressly excludes changing the power state from standby to active.

Furthermore, the Applicant respectfully disagrees with the Office Action's attempt to read into Claim 1 a definition of a term not used in Claim 1. If the Applicant wanted Claim 1 to recite the term "power cycling," the Applicant would have included the term in Claim 1 (just as the Applicant has included that term in Claim 16). Yet by expressly not using the term "power cycling" in Claim 1, the Applicant has expressly differentiated Claim 1 from the definition of the term "power cycling." In addition, the Applicant notes that while the specification defines the term "power cycling" as changing the power state of a device, the specification has not defined the concept of changing the power state in terms of the term "power cycling," and therefore the Applicant respectfully submits that it is not proper for the Office Action to do so.

The only way that the Applicant has been able to reconcile the Office Action's reliance on the definition of "power cycling" from page 10 of the Application would be to equate the term "standby" to "unpowered." Yet the two terms are clearly distinguished in the Application, as evidenced by the two passages provide above. Furthermore, on its face, the term "standby" would be understood by one of ordinary skill in the art to mean that a device in "standby" has power, and thus a change in power state from "standby" to "active" leaves the device in a "powered" power state.

While *Schenkel* discloses an approach for determining a network topology by sending a signal consisting of a sequence of bursts of packets and measuring such packet traffic at the output of a sending device and the input of a receiving device, including the stimulation of an "idle" device for which the traffic is too low to make an accurate statistical comparison, this does not relate to "changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**" as featured in Claim 1 of the present application.

(7) CONCLUSION OF DISCUSSION OF CLAIM 1

Because *Schenkel* fails to disclose, teach, suggest, or in any way render obvious either "changing the power state of the first network device from either (a) an unpowered state to a powered state or (b) from the powered state to the unpowered state" or "identifying whether

an alteration occurs at the second network device in response to changing the power state of the first network device," the Applicant respectfully submits that, for at least the reasons stated above, Claim 1 is allowable over *Schenkel* and is in condition for allowance.

B. CLAIMS 6, 12, 16, 20, 27-29, 31, AND 38-40

(1) INTRODUCTION – CLAIMS 6, 12, 16, 20, 27-29, 31, AND 38-40

Claims 6, 12, 16, 20, 27-29, 31, and 38-40 contain features that are either the same as or similar to those described above with respect to Claim 1. In particular, Claims 20 and 31 both feature "changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**," which is the same as in Claim 1. Similarly, Claims 6, 27, and 38 feature "activating a particular network device of said set of specified network devices **by *supplying power* to the particular network device that *previously was not supplied with power***," which is a similar feature to that in Claim 1. Similarly, Claims 12, 28, and 39 feature "sending a signal from a control device that results in a change in a power state of a first network device in response to the signal, **wherein the power state changes from either *powered* to *unpowered* or from *unpowered* to *powered***," which is a similar feature to that in Claim 1. Finally, Claims 16, 29, and 40 feature "power cycling a first network device **from either "*off*" to "*on*" or from "*on*" to "*off*,"** which is a similar feature as that in Claim 1.

Therefore, based on at least the reasons stated above with respect to Claim 1, the Applicant respectfully submits that Claims 6, 12, 16, 20, 27-29, 31, and 38-40 are allowable over the art of record and are in condition for allowance.

(2) ADDITIONAL ARGUMENTS REGARDING CLAIMS 6, 27, AND 38

Regarding Claims 6, 27, and 38, the Office Action states that Claim 6 "contains similar limitations as claim 1; therefore, it is rejected under the same rationale." However, Claims 6, 27, and 38 include numerous additional features not found within Claim 1. For example, the first step of Claims 6, 27, and 38 is "(1) establishing connections among a plurality of devices based upon a set of rules," yet Claim 1 lacks anything similar to this step

of establishing connections, little less that those connections are established based upon a set of rules.

Also, Claim 6 features "(5) repeating steps (2), (3), and (4) for each of said set of specified network devices," and therefore, the steps of "activating," "identifying," and "creating and storing" are performed at least two times. Yet in Claim 1, the steps of "changing," "identifying," and "creating and storing" are performed for just a first network device and a second network device.

The Applicant has been unable to identify any features of the cited prior art that correspond to these additional features of Claims 6, 27, and 38. Therefore, the Applicant respectfully submits that Claims 6, 27, and 38 are allowable over the prior art and are in condition for allowance.

(3) ADDITIONAL ARGUMENTS REGARDING CLAIMS 12, 28, AND 39

Regarding Claims 12, 28, and 39, the Office Action states that Claim 12 "contain similar limitations as claim 1 above, therefore are rejected under the same rationale." However, Claims 12, 28, and 39 include numerous features that are not included in Claim 1. For example, Claims 12, 28, and 39 feature "sending a signal from a control device that results in a change in a power state of a first network device," yet Claim 1 lacks anything similar to a control device sending a signal.

Also, in Claims 12, 28, and 39, there are three devices: the control device, the first network device, and the second network device. It is the control device that causes the change in the power state of the first network device as a result of sending the signal, yet in Claim 1, there is no feature about how the power state of the first network device is changed.

While *Schenkel* describes the sending of a burst of packets, which the Office Action may be relying upon as corresponding to the signal sent in Claims 12, 28, and 39, the signals in *Schenkel* are sent from the source device to the destination device to determine if the two devices are connected, and thus *Schenkel* only involves two devices and the signal that allegedly causes the change in power state is sent from one of the devices between which there may be a connection. However, in Claims 12, 28, and 39, there are three devices, and the signal from the control device causes the power state to change at the first network device, and then an alteration is identified at a second network device to determine if the first and

second network devices are connected. Thus, in the approach of Claim 12, 28, and 39, the signal is ***not*** sent from one of the two network devices that may be interconnected, which is different than in *Schenkel*.

Furthermore, in order for the control device to send the signal to the first network device, there must be a known connection between the control device and the first network device, which is not the case in *Schenkel* in which the source device sends the burst of packets to the destination device in order to determine if the source device is connected to the destination device. Therefore, the Applicant respectfully submits that Claims 12, 28, and 39 are allowable over the prior art and are in condition for allowance.

(4) ADDITIONAL ARGUMENTS REGARDING CLAIMS 16, 29, AND 40

Regarding Claims 16, 29, and 40, each features "power cycling a first network device from either "off" to "on" or from "on" to "off"." The Office action rejects the "power cycling" portion of this step on *Schenkel* and the off to on/on to off portion based on *Chang*. The Applicant does not presently dispute that *Change* shows a remotely controlled power switch.

However, the Applicant fails to see how *Chang* can be incorporated into *Schenkel's* approach that is based on sending signal bursts and comparing network traffic between a source and destination device. If the device were turned from "on" to "off", then no signal bursts could be sent or received. If the device were turned from "off" to "on", then there is nothing about how that type of action would result in the signal bursts being sent as described in *Schenkel* and the subsequent statistical comparison of the network traffic to indicate whether a connection exists or not as taught by *Schenkel*. Rather, in the approach of *Schenkel*, some other positive action is required to initial the bursts of packets other than merely turning a device from "off" to "on," and prior to the sending of those signal bursts and subsequent statistical comparison of the traffic, *Schenkel* assumes that the source and destination devices are already both "on" or "powered."

Because neither *Chang* nor *Schenkel* describe how the mere powering on or off of a device as described in *Chang* can result in the determination of whether devices are connected as taught in *Schenkel*, the Applicant respectfully submits that Claims 12, 28, and 39 are allowable over the prior art and are in condition for allowance.

C. CLAIMS 2-5, 7-8, 11, 13-15, 21-26, 32-37, 42-43, 46-51, 54-59, AND 60-68

Claims 2-5 and 58-60 are depending upon Claim 1, Claims 7-8, 11, and 63 are dependent upon Claim 6, Claims 13-15 and 66 are dependent upon Claim 12, Claims 21-26 and 61 are dependent upon Claim 20, Claims 32-37 and 62 are dependent upon Claim 31, Claims 42-43, 46, and 64 are dependent upon Claim 27, Claims 47-49 and 67 are dependent upon Claim 28, Claims 50-51, 54, and 65 are dependent upon Claim 38, Claims 55-57 and 68 are dependent upon Claim 39. Thus, each of Claims 2-5, 7-8, 11, 13-15, 21-26, 32-37, 42-43, 46-51, 54-59, and 60-68include each and every feature of the corresponding independent claims. Therefore, the Applicant respectfully submits that each of Claims 2-5, 7-8, 11, 13-15, 21-26, 32-37, 42-43, 46-51, 54-59, and 60-68is therefore allowable for the reasons given above for the Claims 1, 6, 12, 20, 31, 27, 28, 38, and 39. In addition, each of Claims 2-5, 7-8, 11, 13-15, 21-26, 32-37, 42-43, 46-51, 54-59, and 60-68introduces one or more additional limitations that independently render it patentable. Several of these additional features of the dependent claims are addressed below, while a full discussion of each dependent claim is not included herein at this time based on the fundamental differences already identified herein.

D. CLAIMS 60-68

Claims 60-62 each feature that "when the power state of the first network device is the unpowered state, the first network device is not able to receive one or more packets over the network" and "when the power state of the first network device is the powered state, the first network device is able to receive one or more packets over the network." Claims 60-62 are fully supported by the Application, and no new matter is included. For example, the two portions of the Application provided and discussed above use the terms "unpowered" and "powered," and both terms are distinguished from other terms, such as "standby" and "active" as well as "on" and "off." Furthermore, the term "unpowered" on its face means having "a lack of power," while "powered" means having "power."

Thus, in the context of network devices, one of ordinary skill in the art would understand that a network device in the "unpowered" state would mean that the network device is not able to receive network traffic in the form of packets in a packet based network such the worldwide packet based network known as the Internet. (Application, page 32, lines 5-6.) Conversely, one of ordinary skill in the art would understand that a network device

in the "powered" state would mean that the network device is able to receive network traffic in the form of packets in a packet based network such as the Internet.

The Office Action's rejections are based on *Schenkel's* disclosure of sending of a signal in the form of a burst of packets (or sequential bursts of packets) from a source device to a destination device, which the Office Action alleges is the same as changing the power state of a device from unpowered to powered. However, as defined in Claims 60-62, "the first network device being in the unpowered state means that the first network device is not able to receive one or more packets over the network." Thus, in the approach of Claims 60-62, the first network device cannot change from the unpowered state to the powered state based on sending a signal of a burst of packets because, by definition, the first device being unpowered means that the first device cannot receive packets. Thus, because Claims 60-62 directly contradict the approach of *Schenkel*, the Applicant respectfully submits that Claims 60-62 are allowable and are in condition for allowance.

Claims 63-65 each feature "when the particular network device is not supplied with power, the particular network device is not able to receive one or more packets over the network" and "when the particular network device is supplied with power, the particular network device is able to receive one or more packets over the network," which is similar to Claims 60-62. Likewise, Claims 66-68 each feature "when the power state of the first network device is unpowered, the first network device is not able to receive one or more packets over the network" and "when the power state of the first network device is powered, the first network device is able to receive one or more packets over the network," which is also similar to Claims 60-62. Therefore, the Applicant respectfully submits that Claims 63-65 and 66-68 are each allowable for the same reasons as given above for Claims 60-62.

E. CLAIMS 3, 22, AND 33

Claims 3, 22, and 33 each features "determining whether a state of a port of the terminal server is changed from dead to active in response to changing the power state of the first network device." As a preliminary matter, there appears to be a typographical omission in the citations for Claims 3, 22, and 33 in the Office Action that begins by referring to "column 30 –37" since it is unclear what column and line numbers are being referred to. The

Applicant respectfully requests that a corrected citation from *Schenkel* be provided in the next communication from the Office.

The Office Action cites Col. 2, line 65 – Col. 3, line 7, of *Schenkel* as disclosing a terminal server, yet the Applicant does not see a terminal server listed or described. The word "terminal" does not even appear in that passage, and the only occurrence of the word "server" is in referring to "file servers," which clearly are not terminal servers. An electronic search of *Schenkel* has failed to find any other reference to a "terminal server," nor has the Applicant been able to find any other type of device within *Schenkel* that functions as a terminal server.

Next, while Col. 6, lines 30-35, lines 55-56, and Col. 27, lines 55-62, of *Schenkel* all refer to a "port," there is nothing in those cited portions or any other that the Applicant has found about the port being part of a terminal server. Furthermore, there is nothing in those cited portions of *Schenkel* about the state of the port changing from dead to active as in Claims 3, 22, and 33, little less that such a change in state is in response to changing the power state of the first network device, as in Claim 1. While the last citation refers to "port level of activity," it is in the context of receiving a burst, which means non-zero activity, and thus does not disclose anything about the port being dead.

Because *Schenkel* fails to disclose, teach, suggest, or in any way render obvious either "determining whether a state of a port of the terminal server is changed from dead to active in response to changing the power state of the first network device," the Applicant respectfully submits that, for at least the reasons stated above, Claims 3, 22, and 33 is allowable over *Schenkel* and are in condition for allowance.

F. CLAIMS 13, 47, AND 55

Claims 13, 47, and 55 each features the use of a "power controller that changes the power state of the first network device from unpowered to powered." The Office Action cites *Singh* as disclosing a power controller that "powers up connected computers and other peripheral devices," which the Applicant does not presently dispute. The Office Action then states that the motivation to combine *Schenkel* and *Kracht* with *Singh* is that "Singh's use of a power controller in Schenkel et al-Kracht's system would allow for discovery of devices by using a power controller to power up the first device and all other devices attached to the first device and then creating and storing information regarding the devices that are powered up

due to the power controller." Yet the Office Action continues to rely on the previously discussed portions of *Schenkel* above as disclosing all the features of Claims 12, 28, and 39 from which Claims 13, 47, and 55 depend, respectively.

However, in *Schenkel's* approach, the determination of connections between devices is based on a statistical comparison of the traffic of the signal bursts between source and destination devices, which is independent of a power controller changing the power state of the first network device from unpowered to powered as in Claims 13, 47, and 55. Thus, it is not clear to the Applicant how the use of *Singh's* power controller can be incorporated into the approach of *Schenkel* without changing the principal of operation used by *Schenkel* to determine connections (e.g., the statistical comparison of network traffic).

Furthermore, according to MPEP §2143.01(VI), if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Even if the approach of *Schenkel* were modified to include the power controller of *Singh*, the use of a power controller would have no role in the connection detection approach of *Schenkel* unless the approach of *Schenkel* were modified to detect network connections based solely on powering on or off a device. But such a modification of the approach of *Schenkel* would change the principal of *Schenkel's* operation from a statistical comparison of network traffic sent from a source device to a destination device to merely detecting whether a connection is power or not powered. Thus, in this situation, since the principal of *Schenkel's* operation is changed, *Schenkel* cannot properly be combined with *Singh* according to MPEP §2143.01(VI).

Finally, the Office Action's motivation to combine *Schenkel* and *Kracht* with *Singh* is that "Singh's use of a power controller in Schenkel et al-Kracht's system would allow for discovery of devices by using a power controller to power up the first device and all other devices attached to the first device and then creating and storing information regarding the devices that are powered up due to the power controller." However, the Applicant respectfully submits that there is nothing in any of *Schenkel*, *Kracht*, or *Singh* that teaches or suggests combining their respective teachings.

As stated in the Federal Circuit decision *In re Dembiczak*, 50 USPQ.2d 1617 (Fed. Cir. 1999), (citing *Gore v. Garlock*, 220 USPQ 303, 313 (Fed. Cir. 1983)), "it is very

easy to fall victim to the insidious effect of the hindsight syndrome where that which only the inventor taught is used against its teacher." *Id.* The Federal Circuit stated in *Dembiczak* "that the best defense against subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or suggestion to combine prior art references." *Id.* Thus, the Federal Circuit explains that a proper obviousness analysis requires "***particular factual findings*** regarding the locus of the suggestion, teaching, or motivation to combine prior art references." *Id.* (emphasis added).

In particular, the Federal Circuit states:

> "We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved...although 'the suggestion more often comes from the teachings of the pertinent references'...The range of sources available, however, ***does*** **not** ***diminish the requirement for actual evidence.*** That is, the ***showing*** **must be** ***clear and particular***...Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" *Id.* (emphasis added; internal citations omitted).

Schenkel, *Kracht*, or *Singh* lack any suggestion, teaching, or motivation to combine their teachings. The Office Action lacks a "clear and particular" showing of the suggestion, teaching, or motivation to combine their teachings. In fact, the only motivation provided in the Office Action is the hindsight observation that by combining features of those references, one may achieve the benefits achieved from the invention as described and claimed in the application. It is respectfully submitted that such a hindsight observation is not consistent with the Federal Circuit's requirement for "particular factual findings."

Therefore, because neither *Schenkel* nor *Singh*, either alone or in combination, disclose, teach, suggest, or in any way render obvious the combination of the use of a "power controller that changes the power state of the first network device from unpowered to powered" and "identifying whether an alteration occurs at the second network device in response to changing the power state of the first network device," the Applicant respectfully submits that, for at least the reasons stated above, Claims 13, 47, and 55 is allowable over *Schenkel* and are in condition for allowance.

Furthermore, because the combination of *Schenkel* and *Singh* would change the principle of operation of the approach of *Schenkel*, the Applicant respectfully submits that

Singh cannot be properly combined with *Schenkel* and *Kracht,* per MPEP §2143.01(VI). Finally, because the only motivation provided in the Office Action is the hindsight observation that by combining features of those references, one may achieve the benefits achieved from the invention as described and claimed in the application, the Applicant respectfully submits that *Singh* cannot be properly combined with *Schenkel* and *Kracht* due to the lack of any "particular factual findings" as required by the Federal Circuit.

CONCLUSION

The Applicant believes that all issues raised in the Office Action have been addressed and that allowance of the pending claims is appropriate. After entry of the amendments, further examination on the merits is respectfully requested.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

To the extent necessary to make this reply timely filed, the Applicant petitions for an extension of time under 37 C.F.R. § 1.136.

If any applicable fee is missing or insufficient, throughout the pendency of this application, the Commissioner is hereby authorized to any applicable fees and to credit any overpayments to our Deposit Account No. 50-1302.

Respectfully submitted,
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on 12/19/05 by Tracy Reynolds